FlyBy Math™ Alignment
Indiana's Academic Standards - Mathematics

Standard 2. Computation

Students solve problems involving addition, subtraction, multiplication, and division of integers. They solve problems involving fractions, decimals, ratios, proportions, and percentages.

Indicator	***FlyBy Math*™ Activities**
6.2.7 Understand proportions and use them to solve problems.	--Represent distance, speed, and time relationship for constant speed cases using tables, bar graphs, line graphs, equations and a Cartesian coordinate system.

Standard 3. Algebra and Functions

Students write verbal expressions and sentences as algebraic expressions and equations. They evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results. They investigate geometric relationships and describe them algebraically.

Indicator	***FlyBy Math*™ Activities**
6.3.7 Identify and graph ordered pairs in the four quadrants of the coordinate plane.	--Plot points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system to describe the motion of two airplanes.
6.3.8 Solve problems involving linear functions with integer* values. Write the equation and graph the resulting ordered pairs of integers on a grid.	--Represent distance, speed, and time relationship for constant speed cases using linear equations and a Cartesian coordinate system.
6.3.9 Investigate how a change in one variable relates to a change in a second variable.	--Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates. --Interpret the slope of a line in the context of a distance-rate-time problem.

Standard 5. Measurement

Students deepen their understanding of the measurement of plane and solid shapes and use this understanding to solve problems. They calculate with temperature and money, and choose appropriate units of measure in other areas.

Indicator	***FlyBy Math*™ Activities**
6.5.1 Select and apply appropriate standard units and tools to measure length, area, volume, weight, time, temperature, and the size of angles.	--Conduct simulation and measurement for several aircraft conflict problems.

Standard 6. Data Analysis and Probability

Students compute and analyze statistical measures for data sets. They determine theoretical and experimental probabilities and use them to make predictions about events.

Indicator	***FlyBy Math™* Activities**
6.6.1 Organize and display single-variable data in appropriate graphs and stem-and-leaf plots*, and explain which types of graphs are appropriate for various data sets.	--Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.

Standard 7. Problem Solving

Students make decisions about how to approach problems and communicate their ideas.

Indicator	***FlyBy Math™* Activities**
6.7.1 Analyze problems by identifying relationships, telling relevant from irrelevant information, sequencing and prioritizing information, and observing patterns.	--Apply mathematics to predict and analyze aircraft conflicts and validate through experimentation.
6.7.2 Make and justify mathematical conjectures based on a general description of a mathematical question or problem.	--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system. --Predict outcomes and explain results of mathematical models and experiments.

Students use strategies, skills, and concepts in finding and communicating solutions to problems.

Indicator	***FlyBy Math™* Activities**
6.7.4 Apply strategies and results from simpler problems to solve more complex problems.	--Compare airspace scenarios for both the same and different starting conditions and the same and different rates.
6.7.5 Express solutions clearly and logically by using the appropriate mathematical terms and notation. Support solutions with evidence in both verbal and symbolic work.	--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system. --Predict outcomes and explain results of mathematical models and experiments.
6.7.8 Use graphing to estimate solutions and check the estimates with analytic approaches.	--Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. --Compare predictions, calculation, and experimental evidence for several aircraft conflict problems.
6.7.9 Make precise calculations and check the validity of the results in the context of the problem.	--Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation. --Apply mathematics to predict and analyze aircraft

	conflicts and validate through experimentation.
Students determine when a solution is complete and reasonable and move beyond a particular problem by generalizing to other situations.	
Indicator 6.7.10 Decide whether a solution is reasonable in the context of the original situation.	***FlyBy Math™*** **Activities** --Apply mathematics to predict and analyze aircraft conflicts and validate through experimentation. --Predict outcomes and explain results of mathematical models and experiments.
6.7.11 Note the method of finding the solution and show a conceptual understanding of the method by solving similar problems.	--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.